

DRAFT

**HIGH DESERT CORRIDOR
JOINT POWERS AUTHORITY**

REQUEST FOR PROPOSALS NO. 07-01

FOR

**HIGH DESERT CORRIDOR
ENGINEERING CONSULTANT FIRMS
STRATEGY DEVELOPMENT PROPOSAL**

**FROM THE ANTELOPE VALLEY AREA OF THE
COUNTY OF LOS ANGELES
TO
THE VICTOR VALLEY AREA OF THE
COUNTY OF SAN BERNARDINO
(STATE ROUTE 14 TO INTERSTATE ROUTE 15)**

Issued _____

TABLE OF CONTENTS

INTRODUCTION	2
PROJECT DESCRIPTION	2
MATERIALS FURNISHED BY JPA	3
RELATIONSHIPS	4
CONTRACT	4
PROPOSAL INSTRUCTIONS	4
SUBMITTAL INSTRUCTIONS	4
PROPOSAL FORMAT	5
PRE-PROPOSAL MEETING	7
SCOPE OF SERVICES	7
CONSULTANT SELECTION	8
NEGOTIATIONS AND ENGAGEMENT	10
SCHEDULE FOR CONSULTANT SELECTION	10
CONDITIONS	11
ATTACHMENT “A” – SCOPE OF SERVICES	
ATTACHMENT “B” – DRAFT STANDARD CONTRACT	
ATTACHMENT “C” – PROJECT STUDY REPORT	
ATTACHMENT “D” - MAP	

HIGH DESERT CORRIDOR JOINT POWERS AUTHORITY

REQUEST FOR PROPOSALS NO. 07-01

FOR

HIGH DESERT CORRIDOR

STRATEGY DEVELOPMENT PROPOSAL

I. INTRODUCTION

The High Desert Corridor Joint Powers Authority (JPA) is soliciting proposals from engineering consultant firms (“Consultants”) possessing the demonstrated expertise and experience in construction project design, review and evaluation, construction mobilization and supervision, bid evaluation, project scheduling, cost-benefit analysis, claims review and negotiation, and general management and administration of a construction project and are thereby qualified to administer and manage the major effort to construct a new freeway/expressway known as the High Desert Corridor (HDC) from State Route 14 in the City of Palmdale to I-15 in the City of Victorville, a total of approximately 50 miles. This proposal includes preparation of a Supplemental Project Study Report (SPSR), preparation of a Preliminary Environmental Analysis Report (PEAR), preparation of the Project Approval and Environmental Document (PAED), final design, right-of-way documents (e.g. maps/plats, legal descriptions, etc) and construction management. Refer to Attachment A, Scope of Services, for additional information about these reports.

It is noted that a Project Study Report/Project Development Support (PSR/PDS) dated October 18, 2006, has been prepared and approved by both Caltrans Districts 7 and 8 (See Attachment C, Project Study Report/Project Development Support). Additionally, there are two sections of the proposed HDC described in Section II, below, where environmental studies are already well underway.

The concluding objective of the process is to cause the construction of the High Desert Corridor from SR 14 in Palmdale/Lancaster to I-15 in Victorville/Apple Valley in a timely manner. The overall process includes preparation of environmental documentation under the National Environmental Protection Act (NEPA) and the California Environmental Quality Act (CEQA) sufficient to identify a preferred alignment. There are several other documents required to supplement the environmental documentation including preparation of a Project Report (PR). These studies will allow preparation of final design plans, identification of right of way requirements and adoption of the preferred alignment into local jurisdictions’ General Plans.

The selected Consultant shall perform the work with representatives of the JPA, Caltrans (District 7, 8, and headquarters collectively), and local jurisdictions in Antelope Valley and Victor Valley.

II. PROJECT DESCRIPTION

The HDC is proposed as a freeway/expressway on a new alignment. The analysis area extends from SR 14 in the City of Palmdale near Avenue P-8 to I-15 in the City of Victorville near Stoddard Wells Road. The strategic analysis will be coordinated with the JPA and its staff. The preparation of the various project reports and documents will be closely coordinated with Caltrans and each of the seven local jurisdictions that will be affected by the new HDC. The seven jurisdictions are the County of Los Angeles, the County of San Bernardino, the Cities of Palmdale, Lancaster, Adelanto and Victorville and the Town of Apple Valley. A proactive outreach process is envisioned to provide information to and receive input from the affected communities, businesses, and resource agencies. The document preparation will be based on past conceptual plans developed by the JPA with assistance from Los Angeles and San Bernardino Counties and Caltrans. They will define preliminary corridors, typical cross sections and potential interchange locations for identified alternatives. Attachment D, Map of Potential HDC Area, shows the area within which candidate alignments will be identified. A minimum right-of-way width of 300 feet has been defined. [Specific candidate alignments will be available to the Consultant in time for inclusion in the EIR Notice of Preparation (NOP).]

There are two sections of the HDC that agencies are currently preparing the environmental study documents. One section is identified as the first phase of the HDC and it is located on the east end from US 395 to I-15 continuing into the Town of Apple Valley ending at SR 18 east of the Town limits. This phase is well underway with the City of Victorville as lead agency. Also, a second section, identified as phase two is located in Antelope Valley on the west end of the HDC. It begins at SR 14 near Avenue P-8 and extends easterly to about 100th Street. This is a Caltrans District 7 project to realign a section of SR 138 but which will connect to the HDC. The approximate distances from Palmdale to Victorville are as follows:

Phase 2	SR 14 to 100 th Street	10 miles
Middle Section	120 th Street to US 395	31 miles
<u>Phase 1</u>	<u>US 395 to I-15</u>	<u>9 miles</u>
Total		50 miles

The overall HDC will overlap and include both of these phases. It is anticipated that there will be coordination occurring on a regular basis between the Consultant, representatives of the JPA, preparers of the two studies, the various cities and Caltrans in order to insure compatibility.

III. MATERIALS FURNISHED BY JPA

All data, reports, surveys, drawings, and other documents furnished to the Consultant by the JPA are for the Consultant's use in the preparing a proposal of services shall not be used for any other purpose and shall remain the property of the JPA. All such materials shall be returned to the JPA upon completion of the proposal or other such time as the JPA may determine.

IV. RELATIONSHIPS

The JPA, Caltrans, and local jurisdictions will participate as project partners on the HDC SPSR. The JPA, however, is solely responsible and will be the sole point of contact for all contractual matters related to this project. The Consultant shall take direction only from the JPA and shall regularly inform the JPA of project progress, any outstanding issues, and all project related matters. Participating entities may also offer suggestions and/or recommendations regarding the project or elements of the project. While the JPA enjoys a close relationship with and has considerable confidence in the capabilities of these other parties, the Consultant shall not act on any suggestions, solicited or unsolicited, without obtaining specific direction from the JPA. Unless otherwise directed, all oral and written communication shall be directed only to the JPA. Any distribution of project related communication and information is at the discretion of the JPA.

V. CONTRACT

It is the JPA's intent that the contractual relationship between the Consultant and the JPA shall be substantially as set forth in the attached Sample Contract (Attachment B, Sample Contract). In developing their proposal, the Consultant should carefully review the Sample Contract to take into consideration the rights, obligations, and costs associated therewith. **Any changes that the Consultant desires in the Sample Contract must be specified in its proposal.** The failure of a Consultant to specify in its proposal any changes in the Sample Contract which the Consultant desires shall mean that the Consultant agrees to all of the terms and conditions of the Sample Contract. The Contract will be for reimbursable costs plus fee with a guaranteed maximum total not to exceed amount. Only services specifically covered by the Contract will be reimbursed. It is the Consultant's responsibility to recognize and notify the JPA when services not covered under the Contract are requested. The terms of the Contract will be effective for the duration of the project, which is estimated to be sixty (60) months. This is recognized as an aggressive schedule, made necessary because of the development pressures in the areas within which the alignment is to be defined. Consultants should discuss in their proposals all issues associated with the aggressive schedule. The Contract will be awarded without discrimination relative to race, religion, color, age, sex, or national origin.

VI. PROPOSAL INSTRUCTIONS

A. SUBMITTAL INSTRUCTIONS

All proposals become the property of the JPA upon submission. Although the JPA intends to keep all proposals confidential to the extent permitted by law (with the exception of the successful proposal which will become public information upon acceptance by the JPA), the JPA will not be responsible for proprietary information contained in the proposals. See Section XI, Conditions, for further information concerning the non-confidentiality of proposals.

Fifteen (15) copies of the proposal containing all of the information requested below shall be submitted. The proposal shall be submitted in two separate sealed envelopes, one with the

contents of the main services proposed which shall be marked as the “Services Proposal - Envelope “A”, and one setting forth the Consultant’s proposed compensation which shall be marked as the “Compensation Proposal - Envelope “B”. (Unless clear from the surrounding language or otherwise specified, “Proposal” refers to both envelopes “A” and “B”.) Fax or email copies will not be accepted. Proposals may be mailed or hand delivered. If proposals are to be hand delivered, materials must be closed and sealed as if for mailing.

All proposals must be delivered to the County of San Bernardino’s offices at 825 East Third Street by 12:00 noon on Wednesday, April 30, 2008. Since this is an RFP and not a bid situation, the JPA reserves the right to accept or reject late proposals; however, this should not be construed to mean that the JPA will accept any late proposals.

Proposals shall be directed to:

High Desert Corridor Joint Powers Authority
Attn: Mazin Kasey
County of San Bernardino Department of Public Works
825 E. Third Street
San Bernardino, CA 92415

All questions, correspondence and comments regarding this Request for Proposals or the project shall be directed to:

Mr. Mazin Kasey
Assistant Director, Planning
County of San Bernardino
825 E. Third Street
San Bernardino, CA 92415
(909) 387-7916
mkasey@dpw.sbcounty.gov

B. PROPOSAL FORMAT

The Services Proposal - Envelope “A” must contain the information listed in subsections 1 through 4, below, and must be compiled in the following format:

1. **Cover Letter:** Provide (a) an introduction of the Consultant submitting the proposal, (b) the location of the Consultant’s home office, (c) availability of personnel for this assignment, including specification of a project manager and the project manager’s commitment to the project, (d) description of responsibilities of key personnel to be involved on this project, (e) name and description of any sub-consultants proposed to be used on the project, (f) and any key elements of the approach the Consultant wishes to bring to the JPA’s attention. The cover letter must not exceed two pages.

2. **Relevant Projects:** Provide a brief description of prior work which best illustrates current qualifications relevant to the project. Highlight or expand on experience of projects that are especially applicable to this Contract. List the project name and location, nature of project responsibilities, project sponsor's name, address, telephone number and contact person, completion date and estimated project value. List no more than 10 projects. In addition, provide a response to the following question: Has your firm ever been terminated from a Contract? If the answer is yes, describe the facts and circumstances in detail.
3. **Resumes:** Provide brief resumes of all key personnel, specialists and sub-consultants anticipated to be used for this project. Note the project assignment, total years of experience, education, past experience, and qualifications relevant to the proposed project.
4. **Main Services Proposal:** Provide a description of your proposed financial plan and the tasks and strategies required to execute the project. Tasks outlined in Section VII, Scope of Services, should be addressed, as well as other suggested strategies. Note any issues that are relevant to the execution and completion of the project. Describe the approach to project management, project controls, quality assurance and commitment to the project. The proposal shall include tables showing the number of hours by each Step and each Task within each Step for each person assigned to the project. The Services Proposal shall include a project schedule. The Consultant shall address overall project planning, scheduling and public outreach that will lead to the preparation of the various required technical documents mentioned (e.g. SPSR, PAED, Final Design, Right of Way documents, Construction Management, etc). Letters of intent shall be provided in the Services Proposal for any proposed financing plan through private investors. The Services Proposal shall address project goals, issues to be addressed, potential audiences, and strategies and tasks for achieving the project goals.

The Consultant's Services Proposal – Envelope "A" package shall be limited to 100 (8½" x 11") pages, single-sided. The page limit does not include the outside cover, cover letter, section dividers, resumes, letters of intent, the Compensation Proposal – Envelope "B", or the Local Presence Report. Proposals that do not contain the required information, that do not contain the required number of copies, have any compensation information in the Services Proposal – Envelope "A", or that exceed the page limit may be disqualified.

5. **Compensation Proposal – Envelope "B":** Set forth all compensation desired for your performance of the Contract in detail. In particular, set forth the cost by Step and each Task within each Step. The cost shall show a

buildup from base hourly rates, overhead, direct expenses, and your desired fee. Any anticipated salary adjustments must be incorporated into the cost estimate, as rates will be fixed for the duration of the Contract.

C. PRE-PROPOSAL MEETING

There will be a pre-proposal meeting on February 11, 2008, at 9:00 AM, in Room 100, 825 E. Third Street, San Bernardino, CA 92415. **Attendance is strongly encouraged.**

VII. SCOPE OF SERVICES

The JPA is soliciting proposals from Consultants possessing the demonstrated expertise and experience in construction project design, review and evaluation, construction mobilization and supervision, bid evaluation, project scheduling, cost-benefit analysis, claims review and negotiation, and general management and administration of a transportation/freeway construction project, and are thereby qualified to administer and manage the major effort required of a qualified engineering Consultant for the preparation a Supplemental Project Study Report (SPSR), preparation of a Preliminary Environmental Analysis Report (PEAR), preparation of the Project Approval and Environmental Document (PAED), final design, right-of-way documents (e.g. maps/plats, legal descriptions, etc), and construction management services. Consultants interested in submitting proposals shall research public and private funding or a combination thereof (including toll systems development and toll revenue estimates), identify potential outside private funding sources for project development and eventual construction and present their financing, proposed budget for each Step and each Task within each Step, and project plan to the JPA as part of their proposal. Consider overall project planning, scheduling and public outreach that will lead to the preparation of the various required technical documents mentioned (e.g. SPSR, PAED, final design, right-of-way documents, construction management, etc). Letters of intent shall be provided in the proposal for any proposed financing plan through private investors. The proposal shall address project goals, issues to be addressed, potential audiences, and strategies and tasks for achieving the project goals. For each program activity or task, the Consultant shall indicate resources required, indicate the time and estimated hours required to perform the task, and explain how the task will be conducted and how it contributes to completion of the overall project.

Attachment A, Scope of Services, further defines the Scope of Services as currently envisioned by the JPA. The final Scope of Services for the Contract will be developed in cooperation with the selected Consultant from the proposal submitted. The JPA is open to variations from the Scope of Services defined in Attachment A; however, so that the JPA may evaluate evenly all proposals, a response to the Scope of Services defined in Attachment A is required. Any additionally recommended changes to the Scope of Services will be entertained, but they must be outlined in addition to the Scope of Services as defined in Attachment A. Additional services proposed must increase the likelihood of success in defining an alignment for the HDC, must be embraced by all the affected jurisdictions and these services must justify that they are feasible from the perspective of federal and state resource agencies.

VIII. CONSULTANT SELECTION

The primary objective of the JPA is to select a highly qualified Consultant to perform necessary professional services at a fair and reasonable cost. The JPA will select a Consultant based on the Consultant's qualifications which represent the best value to the JPA, regardless of race, creed, color, or gender. In addition, the JPA has established the following objectives:

- A. The process shall be fair, open and competitive, and the selection of Consultants shall be based on clearly stated, objective criteria. Consultants are specifically prohibited from engaging in any activity or practices that might result in unlawful activity including, but not limited to, rebates, kickbacks, or other unlawful consideration. Additionally, Los Angeles County, San Bernardino County, PTAC members, other evaluation committee members and JPA employees are specifically prohibited from participating in the selection process when these employees have a conflict of interest with any Consultant presenting a proposal in response to this RFP.
- B. Selection of Consultant(s) shall be based upon demonstrated competence, including but not limited to the demonstrated expertise and experience in construction project design, review and evaluation, construction mobilization and supervision, bid evaluation, project scheduling, cost-benefit analysis, claims review and negotiation, and general management and administration of a construction project and on any additional professional qualifications and capabilities necessary for the performance of services required at a fair and reasonable price to the JPA, rather than upon competitive bidding procedures. Factors include:
 - Consultant qualifications
 - Understanding of the work to be done
 - Familiarity with State and Federal procedures
 - Personnel experience
 - Project Approach and schedule
 - Financing Strategy Proposed (amount and timing)
 - Staffing capability
 - Staffing availability and resources to complete the project within scope and timeline
 - Project controls capability
- C. Selection Committee. . The Selection Committee shall consist of five (5) voting members of the PTAC as selected by the PTAC and such other individuals as the Selection Committee shall need for their area of knowledge. The Selection Committee shall review all proposals. Upon review of all proposals by the Selection Committee, if there are less than three (3) proposals, all Consultants determined to be qualified will be short-listed and asked to prepare for an interview. If there are more than three (3) proposals, the top three (3) Consultants determined to be qualified will be short-listed and asked to prepare for an interview. Those Consultants who are not

asked to be interviewed will be promptly notified of their non-selection. After conducting interviews, the Selection Committee shall list the remaining Consultants in order of preference and forward the list to the JPA Board for final selection. Those Consultants who are not ranked first on the order of preference will be promptly notified of their non-selection. A Contract will be negotiated with the responsible, responsive Consultant best conforming to this Request for Proposals and that is, in the opinion of the JPA Board, the most advantageous proposal. The JPA Board will then award the contract and a notice to proceed will be issued. The JPA is under no obligation to issue a Contract for the subject services.

- D. Debarred and Suspended Consultants and Subcontractors: The JPA and its selected Consultant must not make any award or permit any award (contract or subcontract) at any tier to any party which is debarred or suspended or is otherwise excluded from or ineligible for participation in Federal assistance programs under Executive Order 12549, "Debarment and Suspension."
- E. Protests: Consultants may protest the recommended Contract award, provided the protest is in writing, clearly identifies the RFP, is delivered to the address listed above for proposal submission, and submitted within five (5) calendar days of the date of the notification from the Selection Committee that they were not selected for an interview or were not the top Consultant recommended to the JPA Board.

- (1) Grounds for a protest are that the JPA failed to substantially follow the selection procedures and adhere to requirements specified in the RFP or any addenda or amendments; there has been a violation of conflict of interest as provided by California Government Code Section 87100 et seq.; or violation of State or Federal law. Protests will not be accepted on any other grounds. In event of a protest, a panel designated by the JPA Chairman will handle all protests.

- (2) The JPA will consider only those specific issues addressed in the written protest. A written response will be directed to the protesting Consultant within fourteen (14) calendar days of receipt of the protest, advising of the decision with regard to the protest and the basis for the decision. All decisions by the JPA panel are final.

- (3) Final Approval: Consultant acknowledges any contact resulting from this RFP will be awarded by final approval of the JPA Board of Directors, and that unless and until such approval by the JPA Board, there is no binding obligation by the JPA and any action by the Consultant taken prior to such approval is at the Consultant's sole risk.

- (4) Inaccuracies or Misrepresentations: If in the course of the RFP process or in the administration of a resulting Contract, the JPA determines that the Consultant has made a material misstatement or misrepresentation or that

materially inaccurate information has been provided to the JPA, the Consultant may be eliminated from the RFP process or in the event a Contract has been awarded, the Contract may be immediately terminated.

IX. NEGOTIATIONS AND ENGAGEMENT

A Contract shall be negotiated following selection. Please refer to the Consultant selection schedule in Section X. As set forth in Section V, Contract Type, it is the JPA's intent that the contractual relationship between the Consultant and the JPA shall be substantially as set forth in the Sample Contract of Attachment B, Sample Contract. In developing their proposal, the Consultant should carefully review the Sample Contract to take into consideration the rights, obligations, and costs associated therewith. **Any change in the Sample Contract that the Consultant desires must be specified in the Consultant's proposal.** The failure of Consultant to specify in its proposal any changes in the Sample Contract which the Consultant desires shall mean that the Consultant agrees to all of the terms and conditions of the Sample Contract. The JPA reserves the right to disqualify any Consultant that does not provide a written discussion of any disagreements it has relative to the Sample Contract's terms and conditions. The JPA does not anticipate making any substantive changes the Sample Contract's terms and conditions, but reserves the right to do so at any time until approval of the Contract by both parties.

X. SCHEDULE FOR CONSULTANT SELECTION

Issue Request for Proposals	December 7, 2007
Pre-Proposal Meeting	February 11, 2008
Proposals Due	April 30, 2008
PTAC Shortlist Created and Notification to Consultants	May 30, 2008
PTAC Interviews and Ranking of Finalists	June 30, 2008
JPA Board Selection of Consultant and Authorize Negotiation with Consultant	July 17, 2008
Contract Negotiation Completed	August 22, 2008
JPA Board Approval	September 4, 2008
Notice to Proceed	September 11, 2008

These dates are subject to change.

XI. CONDITIONS

A. This is not a solicitation of bids. The JPA reserves the right, for any reason, to accept or reject any one or more proposals; to modify any part of the RFP; or to issue a new RFP. The JPA assumes no responsibility or liability for the accuracy of any information set forth in maps, reports, or other documents/materials provided for the Consultant's use in developing its proposal. The Consultant assumes all liability in the use of such information in developing its proposal. The JPA assumes no responsibility or liability for costs incurred by the Consultant in the preparation of a proposal and

response to this RFP. Materials submitted in connection with this RFP are for the exclusive use of the JPA. All proposals will become the property of the JPA and will not be subject to return. All information contained therein shall be subject to public disclosure under the California Public Records Act, Government Code section 6250 and following. Information in any proposal that a Consultant believes is proprietary or financial information shall be clearly marked and to the extent practicable, separated from the remainder of the proposal. Except for information in any proposal separated and clearly marked as proprietary or financial information, submission of the proposal shall be deemed to be a waiver of any exemption or exception to disclosure that the Consultant may otherwise have. All information in any proposal separated and clearly marked as proprietary and financial information is also subject to disclosure under the provisions of the California Public Records Act, Government Code section 6250 and following. However, in the event the JPA receives a request for the disclosure of any such information, prior to the release of any such information, the JPA will contact the Consultant and will not release the information if the Consultant, within five (5) days of receipt of notice of the disclosure request, requests non-disclosure, provides the JPA a legally sound basis for non-disclosure and agrees to indemnify, defend and hold harmless the JPA in any action brought to disclose such information. The Consultant, by submitting such information, agrees that the failure of JPA to contact the Consultant prior to the release of such information will not be a basis for liability by the JPA or any JPA employee to Consultant.

B. The Consultant is responsible for making all necessary investigations and examinations of documents affecting performance. Failure to do so will not act to relieve the Consultant of any condition of the Sample Contract or the documents. It is mutually agreed that the submission of a proposal shall be considered conclusive evidence that the Consultant has made such investigations and examinations.

C. Any reasonable inquiry to determine the responsibility of a Consultant may be conducted by the JPA. The submission of a proposal shall constitute permission by the Consultant for the JPA to verify all information contained in the proposal. If the JPA deems it necessary, additional information may be requested from the Consultant. Failure to comply with any such request may disqualify a Consultant from further consideration. Such additional information may include additional evidence of financial ability to perform, for example, tax returns, bank statements, etc.

D The JPA, its agents, officers, volunteers, and employees, shall not be liable for any claims, liabilities, penalties, fines or for damage to any goods, properties or effects of any person, caused by or resulting from any acts, errors or omissions of the Consultant or the Consultant's agents, employees, or representatives.

E JPA's Ownership of Materials and Equipment

All services provided by the Consultant, and all materials, documents, reports, and other information of all types, including computer models developed by the Consultant for the project, and all works based thereon, incorporated therein, or derived there from, and all intellectual property and proprietary rights in these materials, documents, reports, and other information of all types, shall be the sole and exclusive property of the JPA.

Attachment A

SCOPE OF SERVICES

The objective of this RFP and its resulting JPA consultant services Contract is to identify a comprehensive strategy that will result in the construction of the HDC from SR14 to I-15.

The strategy should address the following four basic steps associated with the process:

RFP Proposal: Present a strategy acknowledging various options for accomplishing the goal of constructing the HDC in a minimum amount of time. Development of financing plans including public and private funding or a combination thereof (includes toll systems development and toll revenue estimates). Identify potential outside private funding sources for project development and eventual construction. Consider overall project planning, scheduling and public outreach. Include a Budget Estimate with the estimated cost and your desired fee for each Step and each Task within each Step. The Budget Estimate shall show a cost buildup from base hourly rates, overhead, direct expenses, and your desired fee for each Step and each Task within each Step. Include letters of intent for all proposed private financing. After Contract award the selected Consultant shall, pursuant to the Contract, then proceed to each of the following general Steps. Each Step shall be completed and, depending on funding availability and Consultant's satisfactory performance, a notice to proceed to the next Step will be issued by the JPA prior to proceeding to the next Step.

Step 1: (Tasks 1 & 2) Prepare a Supplemental Project Study Report (SPSR) with identification of potential alternatives and development of conceptual design.

Step 2: (Tasks 1, 2, 3, 4, 5, 6 & 7) Preparation of the environmental documents, preliminary design, rights-of-way needs and related studies. At the completion and approval of these reports, a preferred alternative will be selected based on the recommendation of the studies.

Step 3: (Tasks 1, 8 & 9) Prepare Plans, Specifications and Estimates and Right of Way Data Sheets. Assist the JPA to appraise and acquire the necessary rights-of-way for the preferred alternative.

Step 4: (Task 10) Assist the JPA to advertise and award, and then administer a contract for construction of the HDC

Proceeding from one of the above Steps to another is dependent on the availability of funding identified and secured and Consultant's satisfactory performance. The Consultant will also be asked to provide website design and support for marketing and public education and outreach efforts.

The analysis area for the project extends from SR14 in the City of Palmdale to I-15 in the City of

Victorville and on to SR 18 east of the Apple Valley town limits as shown of Attachment D, Map of Potential HDC Area. Portions of the HDC on each end are currently being evaluated under separate contracts. These studies will continue on to completion by the agency currently responsible for completion. The Consultant will be provided these studies and layouts to assure that the studies proposed in this RFP are compatible with the ongoing studies. Eventually, these two projects may be combined with the JPA project.

Task 1 – Project Management

The Consultant shall manage project tasks, budget for each step and task, submit written monthly progress reports with invoices, and schedule bi-weekly phone calls with the JPA or representative designee. The monthly progress report shall document specific accomplishments of each task, difficulties encountered, and any adjustments recommended in the project schedule.

Monthly meetings will be scheduled with the project's Project Development Team (PDT). The Consultant shall document the major points and actions taken at each PDT meeting and provide those notes to the JPA or represented designee within two weeks following each meeting. Up to four public presentations will be made in the San Bernardino and Los Angeles Counties.

The Consultant team will develop a project database of affected parties and interested participants. The database will include resource agencies, key stakeholders, meeting participants, sensitive receptors, and social, environmental, political, and professional organizations. Quarterly fact sheets shall be provided containing basic information on project progress. The fact sheets shall be suitable for inclusion in city council agendas and for posting on the JPA's web site.

The Consultant shall maintain all electronic and hard copy files pertaining to the project and shall provide the JPA with an electronic version of all reports, technical memos, and backup data prior to completion of the study. This shall include a PDF version of the final report. The Consultant and sub-Consultants shall maintain consistent quality control procedures.

Deliverables:

- Monthly progress reports;
- Brief meeting notes and action items from the HDC PDT meetings;
- Quarterly Fact Sheets providing an update on the progress of the study;
- Additional informational materials that can be posted on the JPA's web site, as appropriate.

Task 2: Environmental Constraints Identification and Initial Study/Notice of Preparation

Project Report: The Consultant will prepare a Supplemental Project Study Report (SPSR) and prepare and Preliminary Environmental Analysis Report (PEAR)

Environmental Constraints Identification: Plans and profiles for the candidate alignments will be developed (or obtained from Caltrans or other agencies if available). The Consultant will identify potential environmental constraints within each route. This constraints identification will be based on evaluating a 300 foot cross section (150 feet on either side of the centerline) using preliminary mapping at a scale appropriate for each environmental resource, overlaid on an aerial photo base. The purpose of the constraints identification is to provide further guidance to the JPA on resources that should be avoided to the greatest extent possible in refining the alignments prior to the technical studies.

Initial Study/Notice of Preparation: An Initial Study, Notice of Intent (NOI) and Notice of Preparation (NOP) will be prepared for the HDC corridor from the SR 14 in Palmdale to I-15 in Victorville. The Initial Study for the corridor will describe expected issues and analysis to be provided in the EIS/EIR and the reasons for determining that certain environmental effects would not be significant. The NOP will indicate that an EIR is in preparation, and will request guidance from agencies and the public regarding the scope and content of the environmental information to be included in the EIR. The NOP will include a brief description of the alternatives (incorporated into an initial project description), and will identify the process for completing the EIR as well as its relationship to; 1) the Victorville sponsored EIR/EIS for the first phase of the HDC from US 395 to I-15, 2) the Caltrans SR 138 realignment project on the west end in Palmdale and 3) future local jurisdiction General Plan EIS/EIR's that will be conducted over the next five years.

The draft Initial Study/NOI/NOP will be submitted to the JPA for review and approval for distribution. Local jurisdictions and Caltrans will also be involved in the review process. The NOP distribution list will be used to identify the Responsible Agencies, Trustee Agencies (if any), and other interested parties that should receive the NOP. The Consultant will prepare a specific NOP distribution list for this corridor. The JPA will distribute and mail the required copies of the Initial Study/NOP.

Deliverables:

- Constraints Identification Technical Memorandum
- Draft and final Initial Study and Notice of Preparation

Task 3: Public and Resource Agency Outreach

The JPA and the other partner jurisdictions affected by the HDC corridor anticipate one of the most important elements of performing the EIS/EIR to be the role of public participation. There is sensitivity of the communities in the region to the growing urbanization of the Victor Valley and Antelope Valley, and there is a need to balance these concerns against the long-term mobility needs for both the local and regional traffic passing through the corridor. Consequently, significant attention will be paid by the JPA and the Consultant to public outreach throughout the EIS/EIR process.

Public and resource agency outreach will be an important element in the preparation of the EIS/EIR. The JPA desires that communities along the candidate alignments be afforded ample opportunity to review and comment on alignments prior to the identification of a preferred alignment that can be included in local General Plans. Communities will also have an opportunity to provide input to the adoption of the alignment within the local General Plan amendment process, subsequent to the

preparation of this EIS/EIR.

Task 3.1: Scoping Meetings

Two formal scoping meetings shall be conducted to solicit from the public the scope of the significant issues that should be addressed in the EIS/EIR. The scoping meetings shall be held early in the process prior to the preparation of the technical studies. A court reporter shall record the proceedings of each of the scoping meetings.

Task 3.2: Public Outreach

Public outreach will involve multiple elements. Organized community groups or citizen associations along the corridor will serve as a primary vehicle for disseminating information and for obtaining input. The format for the exchange of information with these community groups will be determined through discussions with community leaders. It is estimated that up to 12 community meetings will be conducted to solicit input and provide information on subjects being addressed in the EIS/EIR. The goal is to provide residents potentially impacted by the project the maximum opportunity for input into the EIS/EIR process. In addition to the community meetings, two public hearings will be held following the release of the Draft EIS/EIR.

In addition to the meetings and hearings, the Consultant will be expected to make presentations at up to eight meetings of city councils and the County Boards of Supervisors and up to four meetings of other various organizations over the course of the project. Up to three fact sheets are anticipated explaining the status of the project at strategic points. This and other material may be placed on the JPA website.

Task 3.3: Resource Agency Coordination

The Consultant shall assist the JPA, local jurisdictions, and Caltrans in coordination with federal and state resource agencies. This shall include, at a minimum, the US Fish and Wildlife Service, the Army Corps of Engineers, the Environmental Protection Agency, the California Department of Fish and Game, regional water agencies, and such other agencies that may have permitting authority critical to determining the feasibility of the alignments or otherwise have an interest in the construction of the HDC. Although formal consultation with these agencies is not expected until the project-level EIR/EIS, it is desired that sufficient input be obtained from the resource agencies to identify an alignment that has a high likelihood of being determined to be feasible once the project-level EIR/EIS is complete. The Consultant shall describe in their proposals an approach to resource agency coordination appropriate to the objectives of establishing a preferred alignment for the HDC in the context of this EIS/EIR.

Deliverables:

- Materials for scoping meetings and scoping meeting documentation
- Handouts and presentation materials to support the identified meetings
- Up to three fact sheets

Task 4: Preparation of Technical Studies

Certain technical studies will be required to provide the basis for selection of a preferred alignment, including the following:

Cultural Resources: For each alignment within the corridor, records searches with the Los Angeles County Museum, the San Bernardino County Museum and other appropriate archeological data sources shall be conducted to determine the location of known archaeological sites and any prehistoric or historic resources that are listed on or eligible for the National Register of Historic Places. Documentation for compliance with Section 106 of the National Historic Preservation Act shall be completed as part of this task. Section 106 compliance shall include records searches for each alignment and field surveys to spot check areas in the vicinity of recorded sites or resources. New site record forms or updates to previous site records shall be performed for up to 200 affected sites. Detailed, 100 percent coverage field surveys would be conducted as part of the future construction level documents.

Biological Resources: The Consultant shall conduct an overview-level analysis of biological resources issues for the HDC corridor alignment. Biological resources shall be examined along at least a 500-foot wide swath that is centered on the alignments and include the footprints of potential interchanges. The analysis shall consist of a review of literature sources, examination of aerial photographs, field surveys, and preparation of a technical report on the survey results and potential project impacts. This shall include examination of biological studies conducted as part of development applications, general plans, and prior transportation studies in the corridor. The analysis shall provide general information on biological resources with a focus on sensitive resource issues. The report shall be suitable for inclusion as a technical appendix to the EIS/EIR.

The Consultant shall review available literature sources (California Natural Diversity Data Base, California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California, and other pertinent sources) to summarize existing information on habitat types and reported locations of threatened or endangered species, or species otherwise considered sensitive. Preliminary habitat maps shall be prepared based on recent aerial photographs and other available sources.

Field surveys shall be performed to field-truth and refine habitat mapping and to assess habitat suitability for threatened, endangered, and other sensitive species. Areas that potentially qualify as wetlands, streambeds, and other jurisdictional waters shall be identified. Potential habitat linkages and wildlife corridors shall also be identified. The field survey should be an overview survey to identify sensitive habitat areas and areas that may require more detailed field analyses under future studies.

The Consultant shall prepare a technical report documenting the results of the literature review and field surveys. The report shall include a general assessment of biological resources within the potential project alignments, identification of sensitive habitat types, a discussion of habitat linkage and wildlife corridor issues, a description of sensitive species that may occur within the alignments, and maps and other exhibits showing habitats and linkage/corridor locations. Potential impacts resulting from each of the alternative routes shall be analyzed based on available project plans. Mitigation measures shall be identified to offset any potentially significant impacts. The Consultant shall identify any additional focused surveys that may be required for subsequent review of the

routes.

Detailed, 100 percent coverage surveys (including protocol surveys for any threatened or endangered species) would be conducted as part of the future construction level documents. The JPA will coordinate with Caltrans, FHWA, USFWS, and CDFG to Consultant the scope and extent of work to be covered in this initial phase.

Floodplain Evaluation: Information on floodplains shall be obtained from mapping by the Federal Emergency Management Agency and from available data in General Plans. The Consultant shall evaluate potential floodplain encroachments for the areas within the corridor right-of-way. A Floodplain Evaluation form shall be prepared.

Hazardous Waste: Records searches of agency databases shall be conducted to determine whether the corridor would impact known hazardous waste sites. Field surveys shall be conducted as appropriate to prepare a Hazardous Waste Initial Site Assessment the corridor.

Socioeconomics: A Background Socioeconomic Analysis shall be prepared to determine potential socioeconomic impacts of the HDC corridor. The Background Socioeconomic Analysis shall provide a description of existing land use, housing, employment, and population conditions in the vicinity of the project alignments. The impact analysis shall address the potential impacts on the residential population and local business community within the project impact area for each alignment, including land use compatibility impacts associated with the proposed improvements. Discussions on environmental justice, right-of-way displacements, relocation assistance, business impacts, neighborhood cohesion, and fiscal impacts (i.e., estimated loss of property tax and sales tax revenues) shall be included. The analysis shall also address each alignment's consistency with relevant local, regional, and state regulations and plans. This shall include an assessment of potential indirect and cumulative effects of the HDC alignment.

Parklands and Recreation: Information on public parklands and historic sites within the corridor right-of-way shall be evaluated.

Traffic: The consultant shall coordinate with SCAG and other agencies as needed to prepare necessary traffic reports and will be provided any current models in process in the antelope and Victor Valley area (e.g. Victor Valley Area Transportation Study (VVATS), Enhanced Antelope Valley Transportation Analysis Model 3).

Air Quality: Regional air quality modeling shall be prepared to determine if proposed improvements to the HDC corridor would result in any exceedance of State or federal ambient air quality standards. Up to ten carbon monoxide (CO) hot spots shall be analyzed within the corridor, locations for which will be mutually determined by the Consultant and the JPA.

Noise: A noise study shall be prepared for the corridor to document existing and future noise levels along each alignment, with an emphasis on identifying impacts to sensitive receptors and estimating noise impact mitigation requirements.

Visual: A preliminary visual analysis shall be prepared to address potential visual impacts of the

project alternatives within each corridor. A detailed visual analysis following the FHWA Visual Impact Assessment Guidelines for Highway Projects is not applicable at this stage of project development, but would be appropriate at the time a construction-level environmental document is prepared.

The visual analysis for this stage of project development shall describe the existing visual characteristics of the area surrounding each alternative and shall identify any significant visual resources. The potential visual impacts from implementation of project will be evaluated through the use of ground level photographs from viewpoints near the project site. Impacts shall be assessed in terms of modifications to landforms and other visual features, as well as any light and glare that may result from project implementation.

For each technical study, a stand alone technical report (draft and final versions) shall be prepared. Other technical evaluations such as public services/utilities and geology will be provided based on General Plan environmental setting data or other data available for the areas within the proposed project limits. Detailed studies would be conducted as part of the construction level document for the corridor. Other technical studies, or variations of the above technical studies, believed to be required to achieve project objectives shall be identified in the Consultant's proposal.

Deliverables

- Draft and final technical reports, six copies of each, plus electronic media

Task 5: Screencheck Draft EIR

Appropriate environmental documentation pursuant to current NEPA/CEQA requirements shall be prepared. Key inputs to the EIS/EIR will be generated during earlier portions of the work program. The environmental consequences of the proposed corridor will be analyzed as follows:

- Evaluation and analysis of specific characteristics of the Antelope and Victor Valley as they affect and will be affected by the proposed HDC alignment.
- Assessment of the environmental impacts that will be created by implementation of the HDC alignment based on established thresholds of significance.
- Formulation of conceptual mitigation measures that can be effectively implemented.
The following NEPA/CEQA mandated topics will be addressed:
 - Any significant irreversible environmental changes that would be involved in the proposed action should it be implemented.
 - Unavoidable adverse impacts.
- Indirect and cumulative effects of the proposed HDC alignment, in conjunction with the General Plan updates being conducted by the jurisdictions along the corridor.
- Preparation of evaluation matrices and accompanying texts that can be easily understood by agency staff, elected officials, and the public as a means of evaluating pros and cons of the HDC alignments. This information will be used as a basis for discussion of the merits of each alignment, leading to a final definition and selection of "the project" for NEPA/CEQA purposes.

These work efforts shall be compiled into a Screencheck Draft EIS/EIR, along with analysis of topical issues required by NEPA/CEQA, an introduction, and project description. Two Screencheck

Draft EIS/EIR's shall be prepared prior to public distribution of the Draft EIS/EIR. The JPA will coordinate reviews of the Screencheck Drafts. The Consultant shall provide 15 copies of each Screencheck Draft.

Deliverables:

- Two screencheck draft EIS/EIRs, 15 copies each

Task 6: Draft EIS/EIR

Following review and modifications to the second Screencheck Draft EIS/EIR, a Draft EIS/EIR and Notice of Completion shall be prepared and submitted to the JPA for review and approval to circulate. The Draft EIS/EIR will be circulated for public review to the agencies listed on the NOP distribution list (as updated). Draft notices for publication in area newspapers will also be prepared. Public hearings will be conducted during the public review period. The Consultant shall attend up to two public hearings to assist the JPA, local jurisdiction staff and Caltrans staff in soliciting and responding to the public comments that will result from circulation of the Draft EIS/EIR for the project. Venues for public hearings will be determined jointly by the JPA and other participating agencies, with Consultant input.

Deliverables:

- Draft EIS/EIR, 25 copies plus electronic media
- Notice of completion
- Material to support public hearings

Task 7: Final EIS/EIR

At the close of the public review period for the Draft EIS/EIR, the Consultant shall meet with the JPA, and local jurisdiction staff to review any comments on the Draft EIS/EIR that were received, and to discuss potential responses to these comments. Once draft responses to comments are completed, they shall be submitted to the JPA, Caltrans, and local jurisdiction staff for review and comment. Agency comments shall be incorporated into the Pre-Final EIS/EIR, which will also include the following.

- Draft EIS/EIR
- Technical appendices
- Findings of Fact and (if needed) Statement of Overriding Considerations
- Draft the JPA Resolution certifying the EIS/EIR and selecting a preferred alignment
- Draft Notice of Availability of Final EIS/EIR

The Pre-Final EIS/EIR will be submitted to the JPA, and the local jurisdictions for concurrent review. This shall include a refined or final definition of "the project," as necessary, which will represent the chosen realignment that can be adopted into local jurisdiction General Plans and upon which a Notice of Determination can be based. Once all comments are received, the Consultant shall make revisions to produce a single check print of the Final EIS/EIR that will be circulated to the JPA and local jurisdictions for review. Following certification of the Final EIS/EIR, the Consultant shall print up to 100 copies for distribution to agencies that submitted substantive

comments on the Draft EIS/EIR. The EIS/EIR shall also be provided in electronic media. The Consultant shall prepare draft transmittal letters for use by the JPA.

Deliverables:

- Responses to comments on Draft EIS/EIR
- Final EIR, up to 100 copies
- Technical appendices
- Findings of Fact and (if needed) Statement of Overriding Considerations
- Draft the JPA Resolution certifying the EIS/EIR and selecting a preferred alignment
- Draft Notice of Availability of Final EIS/EIR

Task 8: Right of Way and Utility Documents

The consultant shall prepare right of way documents and utility relocation documents for the JPA to appraise and acquire rights of way needed to construct the project.

A. Right of Way Requirement Plan Maps

1. General

Consultant shall prepare Right of Way Requirement Plan Maps utilizing the Project layout sheets as a basis. Consultant shall identify the easement limits required for the ultimate roadway operation of the Project, limits required for related facilities such as drainage or utilities, and limits required in excess of the easement areas for construction of the Project (temporary construction easements). Consultant shall identify access control limits where applicable.

Requirements shall reference the freeway centerlines (station and offsets), or where appropriate, centerlines of local roads or property lines. At minimum, the background elements on the Maps will include:

- a. Station lines and centerlines of roadways and drainage facilities.
- b. Layout lines of walls.
- c. Tops and toes of slope.
- d. Edge of travel way, edge of shoulder, curb and gutter, sidewalks, culverts, and other roadway appurtenances.
- e. Existing Bridges

2. Deliverables

Consultant shall deliver the following Right of Way Requirement Plan Maps and coordinate geometry files to a location determined by JPA. Actual plans and files, as determined by JPA, may vary in quantity and content per submittal. The number of sets of each plan shall be determined prior to submittal. All Maps will have appropriate signature blocks for the CALTRANS oversight engineer (different from PS&E), and if necessary, appropriate revision blocks.

CALTRANS, JPA and/or JPA's designee, and other agencies will review the plans after each submittal and transmit review comments to JPA. A comment review meeting may be scheduled between JPA, CALTRANS, and Consultant, where the plans with comments will be presented.

B. Utility Design and Coordination

1 General Requirements

Consultant shall prepare utility plan sheets in English units. Consultant shall be responsible for all necessary unit conversions of relocation plans for incorporation on the utility plan sheets.

Consultant shall update right of way requirements impacted by the design and relocation of utilities. CALTRANS shall coordinate with utility owners to determine right of way requirements for relocation of utilities.

2. Coordination

- a. CALTRANS shall be considered the "Utility Coordinator" for the Project. Consultant shall assist CALTRANS and JPA with meetings and correspondence to the utility companies affected by the Project.
- b. Consultant shall coordinate with JPA and CALTRANS to assist in the proper protection or relocation of affected utilities. Utility owners will prepare utility relocation plans. Consultant shall provide appropriate Project plans that may assist the affected utility owner in the development of relocation plans. Some plans may require preparation in dual, English, and imperial units.
- c. Consultant shall review relocation plans prepared by utility owners to verify compatibility with the Project. Consultant shall respond in writing to JPA and CALTRANS either confirming conformance of the relocation plans to the Project, or nonconformance to the Project and reasons therefore.

3. Utility Plans

- a. Consultant shall prepare an initial set of utility plans which compare all existing utilities to proposed design of the Project. Any utility which conflicts with the improvements proposed by the Project shall be highlighted.
- b. Consultant shall update the utility plans to show the disposition of each utility on the Project. Disposition shall include, but not limited to, the utility company name, original location, proposed location, and responsible party for relocation.

4. Deliverables

a. Utility Conflict Maps

Consultant shall submit utility conflict maps to CALTRANS and JPA. The maps shall provide the following:

1. Geometric layout of the Project with the existing utility locations.
2. Highlight and label each utility that conflicts with the Project.
3. Existing utility callouts shall include the owner and the disposition of the lines.
4. Narrative descriptions shall accompany the utility conflict maps. These narratives shall list each utility that is in conflict with the Project. Information shall include, but not be limited to, the following:
 - Conflict label and drawing reference number for the utility conflict map on which the utility is highlighted and labeled.
 - Description, owner, and disposition of the utility
 - Description of the potential or actual conflict that will occur due to the Project.
 - Prior rights

The utility conflict maps will be used by JPA and CALTRANS to establish which utility companies are affected by the Project and need to be relocated. Consultant shall identify those portions of utilities which require potholing.

Following the submittal of the utility conflict maps, the Consultant shall inform JPA and CALTRANS in writing of any changes in the Project design that alter the utility conflict locations indicated on the maps.

Task 9: Final Design

Applicable Standards

All project deliverables and related material shall be prepared in accordance with current CALTRANS and Federal Highway Administration (FHWA) regulations, policies, procedures, manuals, and standards for ***English*** units.

- A. Roadway design shall be in accordance with the current edition of the CALTRANS Highway Design Manual, the English Highway Design Standards, Standards for English Plans, English Standard Specification, and the Manual of Uniform Traffic Control Devices (California Supplement) (MUTCD).
- B. Basic design shall be in accordance with the PR/PSR once it is approved, and the Geometric Approval Drawings.
- C. Plans shall be prepared in conformance with the current editions of the CALTRANS Drafting

and Plans Manual and the CALTRANS CADD Users Manual.

- D. Plans, specifications, and estimates shall be prepared in conformance with the current editions of the CALTRANS Plans, Specifications, and Estimates Guide.
- E. Structure plans, specifications, and calculations for non-standard retaining walls shall be in accordance with the current editions of the CALTRANS Division of Structures manuals.
- F. All surveys shall conform with the current CALTRANS Surveys Manual.
- G. All field laboratory testing for geotechnical investigations shall be performed and the Materials Report shall be prepared in conformance with current editions of the Guidelines for Geotechnical Design Reports.
- H. All phases of design improvements which impact existing or proposed underground utilities shall conform to CALTRANS Policy on High and Low Risk Underground Facilities within Highway Rights of Way.

Design of the Project shall be performed in accordance with State Standards and practices. Any exceptions to applicable design standards shall be approved by CALTRANS via the process outlined in CALTRANS Highway Design Manual and applicable memorandums and design bulletins published by CALTRANS.

General Description of Required Services

- A. It is not the intent of the following paragraphs to relieve Consultant of professional responsibilities during the performance of this Scope of Services. In all instances where Consultant believes this Scope of Services has not identified requirements that may be pertinent to producing a complete Plans Specifications and Estimate (PS&E), Consultant shall promptly notify JPA's Contract Manager of CONSULTANT'S opinions with evidence thereof.
- B. Consultant shall provide a project approach or management plan that will define the basic schedule and work tasks.
- C. Consultant shall prepare final plans, specifications, and estimates for construction of the project. All deliverables shall be in English, except where noted. Consultant will utilize the preliminary engineering plans, drainage reports, geotechnical reports, and right of way requirements developed prior to this Scope of Services as the basis for the PS&E. Any changes proposed by Consultant shall be brought to the attention of JPA.
- D. Consultant shall carry out the instructions as received from JPA's Contract Manager, or designee, and shall cooperate with CALTRANS, other agencies, and other consultants providing Services for the Project.
- E. Consultant shall coordinate its services with other consultant(s) and CALTRANS in the development of the PS&E for related projects. Any problems or conflicts shall be brought to the immediate attention of JPA.

- F. Consultant shall have sole responsibility for the accuracy and completeness of the reports, plans, specifications, estimates, and related material prepared by Consultant for the project. Consultant shall independently check and identify the engineer and checker for all such material prior to any submittal. The PS&E, reports, and documentation will be reviewed by CALTRANS, JPA, and/or JPA's designee for conformity to the PR/PSR, constructability, and overall project consistency. Reviews by CALTRANS, JPA, and/or JPA's designee will not include detailed review or check of the design of major components and related details, or the accuracy with which such designs are depicted on the plans. Consultant shall not incorporate in the design, any materials or equipment of sole source origin without prior written approval of JPA and CALTRANS.
- G. The exhibits, studies, estimates, calculations, reports and other documents furnished under this Scope of Services shall be of a quality acceptable to JPA and CALTRANS. The criteria for acceptance shall be a product of neat appearance, well organized, technically and grammatically correct, checked, and having the maker and checker identified. The appearance, organization and content of the drawings shall be to CALTRANS standards.
- H. The Consultant shall maintain a set of project files that are indexed in accordance with CALTRANS' Project Development Uniform File System and hand over all project files to JPA at completion of the project who will then forward said files to CALTRANS.
- I. JPA reserves the right to approve all project scope of services changes. Any changes resulting from the addition, deletion, or revisions to the Scope of Services will not be made without prior written approval from JPA. The Consultant shall not be compensated for making any changes to the project Scope of Services other than those approved in writing by JPA.
- J. Consultant shall not suspend performance of this contract during the negotiations of any change orders except as they may be directed by JPA. Consultant shall perform all changes in accordance with the terms and conditions of this contract.
- K. At the completion of this Scope of Services all files and correspondence relating to the Project shall be turned over to JPA. This includes all working data, field data, and background information used in creating the deliverables listed in the Scope of Services.
- L. Consultant shall obtain, at its expense, all applicable CALTRANS Manuals and Standard Plans.
- M. The title sheet for reports, each plan sheet, and calculations shall bear the professional seal, certificated number, registration classification, expiration date of the certificate, signature of the professional engineer, registered in the State of California, responsible for their preparation.
- N. Consultant shall perform alternative engineering studies and designs, as needed and/or as directed by JPA's contract manager.
- O. Consultant shall submit all final plans on CD ROM using MicroStation (.dgn) file format in accordance with CALTRANS standards. The electronic files shall include the engineer's electronic signature and seal. Consultant shall verify the latest version of software used prior to submittal.

- P. As part of the services involved in the preparation of the plans, specifications, and estimates, Consultant shall prepare and furnish Special Provisions for all items included in the plans which are not covered in the Standard Plans and Standard Specifications or required more detail than is presented on the project plans.
- Q. In the event that non-standard features become apparent during detailed design or the conversion to English units that were not identified in the original reports prepared and approved in the preliminary engineering phase, Consultant shall prepare the necessary Fact Sheets for Design Exceptions following CALTRANS guidelines.
- R. Consultant shall develop the Resident Engineer's (RE) File related to the design of the Project. Although the RE File is identified as a deliverable during the final stages of design, SONSULTANT shall update the RE file for the duration of the Scope of Services. Consultant shall provide JPA with a written log of significant items which are added to the RE File. The RE File shall be available for JPA/CALTRANS review at any time during the performance of the Scope of Services.
- S. Consultant shall employ quality control procedures that identify potential risks and uncertainties related to construction of the project. Risks that may be encountered include, but are not limited to, impacts to adjacent properties, public safety, and environmental considerations. If at any time during the performance of this Scope of Services, Consultant observes, encounters, or identifies any circumstance that could pose potential risk, Consultant shall notify JPA.
- T. Consultant shall coordinate with CALTRANS and all other agencies involved or potentially impacted by the project. Consultant shall inform JPA prior to all contacts, meetings, and correspondence on project related issues with CALTRANS or any other agencies.
- U. Consultant shall prepare final plans, specifications, and estimate (PS&E) for construction of necessary soundwalls.

Topographic Mapping

The Consultant shall provide **English** topographic mapping of the Project area. *Metric* aerial topographic mapping will be available for use by the Consultant.

The Consultant shall recommend additional surveying as necessary. The recommendations shall be forwarded to JPA for JPA and CALTRANS review and concurrence prior to beginning any work.

Surveys

A. General Requirements

1. Consultant shall perform all surveys, necessary to complete the PS&E. Consultant shall review the available data and perform the additional design surveys required for the design of the Project.
2. Field and office surveys not covered by the current CALTRANS Surveys Manual, shall

be performed in accordance with accepted professional surveying standards including requirements of current edition of the State of California Professional Engineer's Act and Professional Land Surveyor's Act. In accordance with the Act, "responsible charge" for survey services shall reside with a State of California Licensed Land Surveyor or Registered Civil Engineer (prior to January 1, 1982).

3. CALTRANS, with JPA concurrence, will designate the horizontal and vertical control monuments that are to be the basis of all Consultant performed surveys. CALTRANS will provide the California Coordinate System values and/or elevation values for these monuments. Consultant shall identify any control monuments requiring reestablishment and provide a reestablishment plan to JPA. Upon approval by JPA, Consultant shall reestablish monuments per the reestablishment plan.

CALTRANS has designated that the NAD '83 California Coordinate System datum will be used for horizontal coordinate values.

4. All survey information developed by Consultant shall be in English units.

B. Permits

Consultant shall obtain applicable encroachment permits prior to beginning any field investigation. Additionally, if a traffic control plan is required, Consultant shall prepare the plan. Such documents shall be forwarded to JPA/CALTRANS for their review and concurrence prior to beginning any field investigation.

C. Design Surveys to be Performed by Consultant

Consultant shall identify required design surveys and provide a work plan to JPA. With JPA's concurrence, Consultant shall perform design surveys per the work plan. Consultant surveys may include, but are not limited to, the following:

1. Surveys for detailed design of roadway, structures, retaining walls, soundwalls, drainage, sewer, and water facilities.
2. Survey control for geotechnical investigation, if required.
3. Surveys to verify and augment the aerial topographic mapping.
4. Supplemental surveys for preparation of cross-sections

D. Utility Location Surveys to be Performed by Consultant

Consultant shall identify surveys to verify the location of utilities in potential conflict with the Project. Consultant shall provide a work plan for utility location surveys to JPA. With JPA's concurrence, Consultant shall perform field surveys and update utility PS&E per the work plan.

E. Monumentation Surveys to be Performed by Consultant

Consultant shall identify surveys to perpetuate monuments that control the location of subdivisions, tracts, boundaries, roads, streets, or highways, or provide survey control, affected by the proposed construction of the Project. Consultant shall provide a work plan for monument perpetuation to JPA. With JPA's concurrence, Consultant shall perpetuate monuments and file a record of survey per the work plan.

F. Deliverables

The deliverables shall conform to the following:

1. Survey points, lines, and monuments shall be established, marked, identified and referenced, as required to complete the work and in accordance with the requirements herein.
2. Survey notes, drawings, calculations, and other survey documents/materials shall be completed as required to complete the work and in accordance with the requirements herein.
3. A copy, except as otherwise specified herein, of all original survey documents resulting from this Scope of Services (including original field notes, adjustment calculations, final results and appropriate intermediate documents) shall be delivered to JPA who will forward said documents to CALTRANS. Said documents shall then become the property of CALTRANS. The original survey documents (or a copy, if the original is to be provided to JPA/CALTRANS) shall be retained by Consultant for future reference.
4. When the survey is performed with a Total Station Survey System, the original field notes shall be a legible hard copy listing of the data (observations) as originally collected and submitted by the survey party. Consultant's party chief shall sign the listing.
5. The final results of all surveys, as required, shall be delivered to JPA in the format specified below:
 - a. **Horizontal Control.** Alpha/numeric hard copy point listing with adjusted California Coordinate System northings and eastings and appropriate descriptions based on NAD '83 datum. (Spacing and density of horizontal control monuments shall be in accordance with Caltrans' Surveys Manual, Chapter 11-02.)
 - b. **Vertical Control.** Alpha/numeric hard copy benchmark listing with adjusted elevations on the 1929 NGVD and appropriated descriptions. (Spacing and density of vertical control monuments shall be in accordance with Caltrans' Surveys Manual, Chapter 11-02.)
 - c. **Topography.** Alpha/numeric hard-copy listing, hard-copy drawings and electronic files. Additions or modifications to the delivered topographic mapping and its symbology shall conform to current version of CALTRANS' Drafting and Plans Manual.

- d. **Terrain.** For each cross-section: an alpha/numeric listing, hard-copy drawing and computerized formatted file which is compatible with CALTRANS' computerized design systems. Computerized formatted cross-sections shall be provided on magnetic tapes, cassettes, or disks compatible with CALTRANS' computer systems.

6. Records of Survey

- a. Consultant shall develop a control map to direct monument recovery and recover all monuments affected by the Project.
- b. Consultant shall verify the character of all points to be utilized in the Records of Survey.
- c. Consultant shall tie all monuments found during the course of performing design surveys to the closest CALTRANS control.
- d. Consultant shall reference the centerline and side lines of the Project to surrounding Sections, Blocks, and Tract corners.

7. Construction Control Survey Map

- a. Consultant shall provide a Construction Control Survey Map for the Project. At minimum, the map will include:
 - Centerline alignment data for all Project improvements and existing street centerlines
 - Control points identified in plan (horizontal, vertical, horizontal and vertical, and cadastral monuments)
 - Tabulated control point listing with full descriptions
 - Tabulated cadastral monument listing with full description
 - Horizontal and vertical control bases
 - Survey data sources.
- b. Consultant shall provide a State Plane Coordinate Control Data List. The list shall include all geodetic control data used for the Project, including geodetic data provided by CALTRANS and JPA. The list shall include station name, latitude, longitude, northing, easting, elevation, etc. If available, data shall also include a full description of all photo control points used to for topographic mapping within the Project.
- c. Consultant shall provide a State Plane Coordinate ASCII point file for all calculated points. Consultant shall provide full descriptions of all monuments, set or found.
- d. Consultant shall provide centerline alignment files for all permanent and temporary features.

G. Information to be provided by JPA or CALTRANS

1. English Control Diagram Maps.
2. Existing survey data and notes generated for the Project, as available.

Geotechnical Investigation and Materials Report

A. General Requirements

1. Consultant shall be required to review data provided by JPA and provide additional geotechnical explorations, laboratory testing, analyses and recommendations required for final roadway and structural design. To the extent that is possible, Consultant shall utilize the existing information provided by JPA and shall not duplicate work which has been conducted during the preliminary engineering phase of the project. All additional field explorations shall meet CALTRANS requirements.
2. Consultant shall provide experienced personnel, equipment, and facilities to perform materials sampling and testing.
3. All reports and plans shall bear the State of California Certified Engineering Geologist or Registered Professional Registration Seal with the signature, license number and registration certificate expiration date of the geologist or engineer responsible for the preparation of the report. The geologist or engineer responsible for the preparation of the reports shall be competent in geotechnical engineering with deep foundation experience.
4. In the event the existence of hazardous materials is discovered by Consultant, Consultant shall be required to immediately notify JPA.
5. In case of future construction claims against either JPA or CALTRANS, Consultant shall be retained by JPA to provide expert testimony regarding Consultant services.
6. All reports shall be prepared in English units.

B. Permits

1. Consultant shall provide necessary applications for Encroachment permits onto State property. A Traffic Control plan, when required, shall be delivered to CALTRANS for review.
2. Consultant shall identify all private property requiring Rights of Entry. CALTRANS will provide all Rights of Entry for access on private property.
3. Consultant shall obtain all other encroachment permits.

C. Geotechnical Services to be provided by Consultant

Consultant shall prepare a Geotechnical Design Report (GDR) for the Project in

conformance with the CALTRANS Guidelines for Geotechnical Design Reports. The GDR shall provide, but is not limited to, the following:

1. Determination of subsurface conditions and subsoil properties at proposed structure sites necessary to make recommendations for design of structure foundations.
2. Determination of ground water conditions and impacts on foundation design and construction.
3. Determination of subsurface conditions and subsoil properties relating to foundation settlement and rate of settlement for embankment and structure loading.
4. Determination of impacts of geologic/geotechnical conditions on construction and recommended mitigation measures.
5. Identification and recommendations for geologic/geotechnical constraints.
6. Analysis for potentially liquefiable or collapsible soils and corresponding recommendations for design or mitigation measures.
7. Engineering analyses and calculations required to provide design parameters for static and pseudo-static analysis for slope stability and settlement.
8. Site seismicity studies and peak ground acceleration evaluations to provide a basis for estimating seismic design parameters for use in structure and embankment design (based on published literature) and site investigations.
9. A listing of soil samples obtained from the field exploration program which have been tested in CALTRANS certified laboratories to evaluate the controlling engineering properties of the encountered subsoils. Assuming that the soil samples are free of contamination, laboratory testing may include, but is not limited to:

- | | |
|---------------------------------|--------------------------|
| - Moisture and Density | - Sieve Analysis |
| - Shear Strength | - Plasticity Index |
| - Expansion Index | - Resistivity, Ph |
| - Sand Equivalent | - Consolidation/Collapse |
| - Soluble Sulfate and Chlorides | - R-Value |
| - Maximum Density | |

D. Materials Report

Consultant shall prepare a materials report for the project. The report shall comply with Topic 114, "Materials Report" of the Highway Design Manual. The Materials Report should include pavement structural section recommendations or pavement studies, culverts or drainage materials, corrosion studies, and materials or disposed sites.

E. Deliverables

1. Field Exploration map

Consultant shall prepare a map detailing the field exploration plan. The map shall provide the following:

- a. Location of each proposed boring. Include depth of boring and the proposed finished surface elevation.
- b. Location and depth of all previous borings.
- c. Geometric layout provided from preliminary engineering.
- d. Information regarding property owner impacted by each particular boring, if available.

JPA and CALTRANS will review and approve the field exploration map prior to application for encroachment permits. All encroachment permits and rights of entry shall be obtained prior to scheduling of any field explorations.

2. Geotechnical Design Report

Consultant shall submit a Geotechnical Design Report to JPA for CALTRANS and JPA review. Comments from the review will be submitted to Consultant for incorporation into the final report. The number of copies of each report shall be determined prior to submittal.

3. Materials Report

Consultant shall submit a Materials Report to JPA for CALTRANS and JPA review. Comments from the review will be submitted to Consultant for incorporation into the final report. The number of copies of each report shall be determined prior to submittal.

4. Foundation Reports

Consultant shall submit draft foundation reports to JPA for CALTRANS and JPA review. Comments from the review will be submitted to Consultant for incorporation into the final reports. The number of copies of each report shall be determined prior to submittal.

Roadway Design

a. General Requirements

Consultant shall prepare and deliver to JPA all plans, specifications, and estimates for roadway construction. JPA will forward said documents to CALTRANS for their review and approval. Except where specified herein, all Consultant prepared plans, specifications, quantity calculations, and estimates shall be prepared in English units.

b. Plans, Specifications, and Estimates

1. General

All plans, specifications, quantity calculations, and estimates shall conform to CALTRANS requirements and shall be made available to JPA/CALTRANS for review and approval at stages specified in the Milestone Schedule and upon request.

2. Roadway Design

- a. All title, index, sections, layouts, profiles, quantities, construction details, and other related plan sheets shall be provided on CALTRANS standard size sheets. As directed by JPA, Consultant shall also provide 11" x 17" reduced copy of the plan sets for all submittals.
- b. The Consultant shall design the roadway structural section. The Traffic Index (TI) shall be provided to Consultant by CALTRANS for use in the design of the roadway structural section. The R-value to be used for the design of the roadway structural section shall be submitted by Consultant to CALTRANS and JPA for approval prior to final design of the structural section.
- c. Consultant shall prepare and update right of way requirement layouts and files as part of the roadway design. Consultant shall coordinate with CALTRANS Right of Way Engineering or JPA Consultant on changes to right of way requirements.
- d. Consultant shall prepare a Project Narrative which provides a general overview of the Project. Consultant shall also discuss significant design features and/or design exceptions related to the Project deliverables.

c. Deliverables

Consultant shall deliver the following plan packages to a location determined by JPA. Actual plan packages, as determined by JPA, may vary in quantity and content per submittal. The number of sets of each plan, estimate or report shall be determined prior to submittal.

CALTRANS, JPA and/or JPA's designee, and other agencies will review the plans after each submittal and transmit review comments to JPA. A comment review meeting may be scheduled between JPA, CALTRANS, and Consultant, where the plans with comments will be presented.

- a. 35% Submittal.
 - Title Sheet/Standard Plan/Key Map & Line Index
 - Typical Cross-Sections
 - Layout Plans (with Retaining Wall and Sound wall alignments), Profile Plans, and Superelevation Diagrams
 - Contour Grading Plans

- Drainage Concepts
 - Conceptual Stage Construction and Detour Plans
 - Utility Plans
 - Right of Way, Access Control, and Easement Requirements
 - Survey Data & Survey Map
 - Construction Cost Estimate
 - Specialty Structure Type Selection Package
- b. 65% Submittal.
- Project Narrative
 - Title Sheet/Standard Plan/Key Map & Line Index
 - Typical Cross-Sections
 - Layout Plans, Profile Plans, and Superelevation Diagrams
 - Construction Details
 - Contour Grading Plans
 - Drainage Plans and Profiles
 - Edge Drain Plans
 - Sanitary Sewer Plans, Profiles, and Details
 - Water Plans, Profiles, and Details
 - Utility Plans
 - Stage Construction, Traffic Handling Plans and Detours
 - Pavement Delineation Plans
 - Sign Plans
 - Retaining Wall Plans and Details
 - Sound Wall Plan, Details, and Quantities
 - Irrigation Crossover Conduit Plans
 - Right of Way, Access Control, and Temporary Construction Easement Requirements
 - Construction Cost Estimate
 - Quality Control Statement
- c. 95% Submittal.
- Project Narrative
 - Title Sheet/Standard Plan/Key Map & Line Index
 - Typical Cross-Sections
 - Layout Plans, Profile Plans, and Superelevation Diagrams
 - Construction Details
 - Contour Grading Plans
 - Drainage Plans, Profiles, Details, and Quantities
 - Edge Drain Plans and Quantities
 - Sanitary Sewer Plans, Profiles, Details, and Quantities
 - Water Plans, Profiles, Details, and Quantities
 - Utility Plans and Details
 - Stage Construction, Traffic Handling Plans, and Detours
 - Stage Construction Quantities
 - Pavement Delineation Plans, Details, and Quantities
 - Summary of Quantities
 - Sign Plans, Details, and Quantities
 - Bridge Mounted Signs

- Retaining Wall Plans, Details, and Quantities
 - Sound Wall Plans, Details, and Quantities
 - Electrical Service Summary
 - Right of Way, Access Control, and Temporary Construction Easement Requirements
 - Hydraulic/Hydrology Report
 - Construction Schedule
 - Draft Special Provisions (Roadway, Drainage, Construction Staging, Traffic Handling, Electrical, Retaining Walls, Sound Walls, Utilities, Pavement Delineation/Signs, Erosion Control/Landscaping)
 - Basic Engineer's Estimate/Construction Cost Estimate
 - Quality Control Statement
 - Resident Engineer's File
- e. 100% Submittal.
- Final PS&E (all items listed in 95% submittal)
 - Representative Cross Sections (15 meter Intervals)
 - Order Forms for State-Furnished Materials and Signs
 - Quality Control Statement

Structural Design

A. General Requirements

1. Consultant shall prepare and deliver to JPA all plans, specifications, and estimates for the structures on the Project. JPA will forward said documents to CALTRANS DIVISION OF STRUCTURES (DOS) for their review and approval. All Consultant prepared plans, specifications, quantity calculations, and estimates shall be prepared in English units and conform to CALTRANS requirements.
2. Each design shall be independently checked by a qualified engineer who is registered in the State of California. Each plan sheet shall show the name of the engineer who performed the independent check.
3. The calculations for both the design and independent design check shall be submitted as part of the PS&E submittal. The respective calculations shall bear the State of California Registered Professional Engineer registration seal with the signature, license number and registration certificate expiration date of the design engineer and independent check engineer.

B. Preliminary Design Review

1. Consultant shall review the as-built drawings of all existing bridge structures within the project vicinity.
2. Consultant shall perform site surveys as necessary to determine existing conditions and topography and also to establish or verify construction survey controls.

C. Plans, Specifications, and Estimates

1. General

All plans, specifications, quantity calculations, and estimates shall conform to CALTRANS requirements and shall be made available to JPA/CALTRANS for review and approval at stages specified in the milestone schedule and upon request by JPA's Contract Manager or designee.

2. Special Provisions

Consultant shall prepare project specific Structure Special Provisions in accordance with the Caltrans Plans, Specification and Estimates Guide. The Structure Special Provisions shall bear the State of California Registered Professional Engineer registration seal with the signature, license number and registration certificate expiration date of the Engineer who prepared the special provisions or the Engineer under whose direction they were prepared. A list of contact items with item descriptions, item numbers, units of pay, and item pay codes, but without quantities or estimated unit costs, shall be included in the front of the special provisions.

3. Estimate

Consultant shall prepare quantity calculations and develop unit costs for items that are applicable to this project and shall prepare the bid cost estimate, utilizing the CALTRANS Quantity summary and Estimate Forms. Quantities for all contract items, including cost of lump sum items, shall be substantiated by calculations. Quantity calculations shall be neat and orderly and shall show all sketches, diagrams and dimensions necessary to allow them to be independently used by field engineers. All quantity calculations shall be independently checked and substantiated with independent calculations.

4. Structure Design

Consultant shall prepare project specific Structure Special Provisions in accordance with the Caltrans Plans, Specification and Estimates Guide. The Structure Special Provisions shall bear the State of California Registered Professional Engineer registration seal with the signature, license number and registration certificate expiration date

5. Deliverables.

As required, the following submittals shall be delivered to JPA. The specific number of plans, estimates, and reports shall be determined prior to submittal.

- a. General Plan/Type Selection

Consultant shall prepare and submit a general plan for the specialty structures. No further design work will be performed until DOS and JPA require a Type Selection Report. If necessary, a Type Selection Review Meeting will be held in Sacramento, in which Consultant shall be prepared to discuss and provide information on foundation requirements,

hydrological requirements, falsework requirements, seismic and aesthetic considerations, traffic handling, construction cost, and other pertinent information that is needed to determine the proper structure type.

A Type Selection Review Meeting will be scheduled a minimum of 2 weeks following the receipt of the Type Selection Report which consists of the proposed General Plan, General Plan Estimate, Type Selection Memo, Vicinity Map, and Project Seismic Design Criteria. The results of the meeting will be summarized in writing to the Consultant within 2 weeks following the meeting. Within 2 weeks after reviving written approval of the proposed General Plan and structure type, the Consultant shall furnish OSFP with rescued copies of the approved General Plan. The number of copies will be determined at time of submittal.

Sound Walls

- A. Consultant shall prepare a sound wall plan. A Sound wall plan shall provide the location, length, height, typical sections, log of borings, and material and cost estimate calculations.
- B. Consultant shall make provisions in the sound wall plan, specifications, quantity calculations, and estimates for one alternative construction method.
- C. Consultant shall update right of way requirements, as needed to incorporate temporary construction easements for sound wall.
- D. Consultant shall prepare independent sound wall plans, specifications, quantity calculations, and estimates for construction of the walls.

Retaining Walls

- A. Consultant shall be required to prepare all retaining wall plans. Said plans shall include wall location, height, typical sections, log of test borings, and material and cost estimate calculations. The extent of retaining wall construction shall be determined during the review of preliminary roadway engineering.
- B. Consultant shall update right of way requirements, as needed to incorporate temporary construction easements for retaining walls.
- C. All required retaining walls are anticipated to be standard type CALTRANS walls found in CALTRANS Standard Plans. Consultant shall notify JPA immediately upon determination that a non-standard retaining wall will be required for the Project.

Drainage Design

d. General Requirements

- 1. Consultant shall be responsible for the design, including hydrologic computations of all drainage facilities necessary to provide adequate drainage of the Project, including

pavement drainage, runoff generated within the Project Area, inflows from watersheds beyond the Project, and interim drainage during construction. Except where specified herein, all plans, specifications, quantity calculations, estimates, and reports shall be in English units and conform to CALTRANS requirements. Where conflicts in methodology occur, Consultant shall notify JPA immediately for resolution.

2. All reports shall be prepared by a qualified Civil Engineer who is registered in the State of California, and shall bear the State of California Registered Professional Engineer registration seal with his signature, license number, and registration certificate expiration date of the Engineer responsible for the preparation.

e. Permits

Consultant will prepare exhibits required to assist JPA in obtaining any permits and construction/maintenance agreements.

f. Hydrology Reports

1. Off-site Hydrology Report

- g. Consultant shall prepare an off-site hydrology report for the Project. The report shall be prepared in English units and conform to CALTRANS standards.
- h. Layout plans identify the location of existing and, if necessary, proposed drainage facilities shall be included within the report.
- i. The report shall be submitted to JPA and CALTRANS for review. Comments generated from these reviews will be returned to Consultant for incorporation into the final plan. The number of copies of the report shall be determined prior to submittal.

2. On-site Hydrology Report

- a. Consultant shall provide an on-site hydrology report for the Project. The report shall be prepared in English units and conform to CALTRANS standards.
- b. Layout plans identifying location of proposed drainage facilities shall be included within the report.
- c. The report shall be submitted to JPA and CALTRANS for review. Comments generated from these reviews will be returned to Consultant for incorporation into the final plan. The number of copies of the report shall be determined prior to submittal.

D. Reports and Plans

1. General

- a. Consultant shall update right of way requirements as needed to incorporate drainage and temporary construction easements for drainage facilities.

- b. Conflicts with other utilities, including other drainage facilities, shall be identified in plan and profile.

2. Drainage Report and Plans

- a. Following CALTRANS and other agency review of the off-site and on-site hydrology reports, the Consultant shall perform hydraulic analysis for all of the drainage facilities on the Project. The corresponding drainage report shall be prepared in English units and shall incorporate updated hydrology calculations.
- b. Drainage plans and profiles of proposed drainage facilities shall be included within the report. Modifications to existing facilities shall be identified on the plans.
- c. The drainage report shall be submitted to JPA and CALTRANS for review.

3. Edge Drains

Consultant shall prepare edge drain plans for the pavement structural section drainage system.

Traffic Engineering

Consultant shall prepare the necessary traffic handling plans showing long-term closure of lanes, local road and highway detours, and number of available lanes. Included in these plans are stage construction, construction traffic handling and detours, signing, striping, lighting, and signal modifications as presented below:

A. Stage Construction

Consultant shall prepare stage construction plans. Plans shall reflect the construction of all improvements identified on the plans. The plans shall include existing roadbeds, construction to be performed in the stage shown, traffic direction, number of lanes and future construction. Consultant shall continually evaluate and update the stage construction plans during all phases of design.

B. Construction Traffic Handling Plans and Detours

- 1. Consultant shall prepare a Traffic Management Plan. The plan shall conform to CALTRANS standards.
- 2. The Traffic Management Plan shall be submitted to JPA and CALTRANS for review. Comments generated from this review will be returned to Consultant for incorporation into the final plan. The number of copies of the plan shall be determined prior to submittal.
- 3. Consultant shall prepare traffic handling plans which show long-term closure of lanes,

detours and number of available lanes. Included in these plans are signing, striping, and modifications. Consultant shall continually evaluate and update the traffic handling plans during the design process.

4. Consultant shall update right of way requirements as needed to incorporate temporary construction easements for traffic detours.

C. Signing Plans

Consultant shall prepare final plans, specifications, and estimates for signing plans including layouts showing the locations of roadside and overhead signs, special sign details, lighting, and any structural or foundation requirements in accordance with applicable standards and design criteria. Any requirements for electrical service shall be coordinated with the local electric utility by Consultant.

D. Pavement Delineation Plans

Consultant shall prepare final plans, specifications, and estimates for pavement delineation in accordance with applicable CALTRANS standards and design criteria.

E. Electrical Plans

Consultant shall prepare final plan, specifications, and estimates for electrical plans including layouts showing lighting standard and conduit locations, other lighting appurtenances, and any structural or foundation requirements in accordance with applicable standards and design criteria. Any requirements for electrical service shall be coordinated with the local electric utility by Consultant.

Deliverables:

- Signed and stamped design plans, traffic control plans, erosion control, utility relocations (if performed by JPA contractor), cross sections, etc
- Signed and stamped contract special provisions including any utility arrangements
- On call services for bidders questions/clarifications

Task 10: Construction Management

The JPA will utilize the services of CONSULTANT to support the construction activities as described below. The JPA recognizes that these services may be altered, based upon the final design and final delivery process. The requirements below are estimates as to what will be required, during the construction phase, and are subject to modification.

PERFORMANCE REQUIREMENTS

Resumes of personnel must be submitted to JPA for review and approval prior to assignment to the Project. JPA and Consultant will jointly determine the quality and quantity of services that are required by Consultant personnel. Personnel selected for assignment by Consultant shall be made available for personal interviews prior to acceptance by JPA. If, in the opinion of JPA, an individual

lacks adequate experience, the individual may be rejected or may be accepted on a trial basis until such time the individual's ability to perform the required services has been demonstrated. If, at any time, the performance of Consultant personnel is unsatisfactory to JPA, JPA may release him/her by written notice and may request another qualified person be assigned.

If Consultant personnel are on leave of absence, the Consultant shall provide approved, equally qualified replacement personnel until the assigned personnel returns to the Project.

The typical workday includes all hours worked by the construction Contractor. If necessary, overtime for Consultant personnel may be required. The construction Contractor's operations may be restricted to specific hours during the week, which shall become the normal workday for Consultant personnel. The Consultant, with concurrence from JPA, shall have the authority to increase, decrease, or eliminate Consultant personnel work hours dependent on the schedule and requirements of the construction Contractor. All overtime required by Consultant personnel shall be approved and authorized by JPA prior to each occurrence.

Consultant personnel shall be knowledgeable of and comply with all applicable local, state, and federal regulations. Consultant personnel shall cooperate and consult with JPA, State, and City officials during the course of the Project. Consultant personnel shall perform duties as may be required to assure that construction is being performed in accordance with the Project plans and specifications. Consultant personnel shall keep accurate and timely records and document all work performed by the Contractor and Consultant.

Consultant personnel shall assist in monitoring compliance with:

1. Labor standards and related wage determination decisions of the Secretary of Labor
2. Safety and accident prevention provisions for the Project
3. Equal opportunity provisions for the Project.

All services required hereunder shall be performed in accordance with California Department of Transportation guidelines, regulations, policies, procedures, manuals, and standards.

A. DELIVERABLES

1. Inspector daily reports, extra work diaries, and Resident Engineers' daily diaries
2. Monthly Project Activity Summary Reports
3. Monthly Contractor progress payments, back-up documentation, and Contractor payment records.
4. Contractor final payment documents, delivered to JPA no later than ten (10) working days after acceptance by JPA of the completed construction projects
5. Project Completion Report
6. All project files, project reports, correspondence, memoranda, shop drawings, project logs,

change order data, claims and claim reports, and Contractor payment records

7. Certified payrolls and fringe benefit statements for all employees, Consultant and Contractor, who are subject to the State and/or Federal prevailing wage rates

B. DUTIES AND RESPONSIBILITIES

It is noted and acknowledged that the Project segments maybe executed under multiple construction contracts. Where the terms “Segment”, “Project” and “Contractor” are used herein, they shall apply to all phases and Contractors.

1. Bid Process

a. Bid Documents

Consultant shall assist JPA, as requested, with the following tasks:

1. Review of bid documents
2. Preparation of bid tabulations

b. Pre-construction Meetings

Consultant shall assist JPA in conducting one or more, pre-construction meetings with all involved parties on the Project. Parties may include, but are not limited to, the Contractor, Caltrans, the design engineer, cities, utility companies, and developers.

c. Contract Award

Consultant shall assist JPA, as requested, with the following tasks:

1. Review of bid for completeness and responsiveness
2. Perform bid analysis
3. Development of contractor payment schedules, and other procedural items.
4. Checking Contractor references, licenses, insurance, and sureties.
5. Coordination with prospective Contractor for award of construction contract(s).

All processes will be consistent with procedures outlined by the California Department of Transportation for Special Funded Programs and Local Assistance Procedure Manuals.

2. Project Administration

- a. Consultant shall administer project construction contracts using Caltrans Construction Manual as a guideline.

- b. Consultant shall conduct regular project coordination meetings with Contractors, JPA designee, Caltrans, and design engineer, as appropriate.
 - c. Consultant shall prepare Contractor progress payments and maintain payment records and supporting documentation. All progress payments shall be reviewed by JPA for approval.
 - d. Consultant shall establish and maintain Project records. Project record keeping shall include, but are not limited to, correspondence, memoranda, contract documents, change orders, claims, JPA and engineer directives, meeting minutes, shop drawings, supplementary drawings, and requests for payment. CONSULTANT shall maintain a record of the names, addresses, and telephone and fax numbers of the Contractors, subcontractors, and principal material suppliers.
 - e. Consultant shall establish and maintain a filing system for each Project using the Caltrans Construction Manual as a guideline.
 - f. Consultant shall monitor Contractors' construction schedules on an ongoing basis and alert JPA to conditions that may lead to delays in completion of the Project.
 - g. Consultant shall prepare and submit a monthly Activity Summary Report for each segment. The activity report shall include construction activity, accomplishments, and status of project budget and schedule.
 - h. Consultant shall review and ensure compliance with environmental requirements.
 - i. Consultant shall participate in partnering sessions with the Contractors, JPA, and Caltrans, as required.
 - j. Consultant shall assure that the Project meets all provisions of the Caltrans Quality Assurance Program Manual.
 - k. Consultant shall review Contractors' certified payroll records and assist JPA with labor compliance.
 - l. Consultant shall assure that the Project meets all provisions of the Caltrans Storm Water Pollution Prevention Plan (SWPPP).
 - m. Consultant shall assure that the Project meets all applicable regulations of the Air Quality Management District (AQMD).
3. Construction Coordination
- a. Consultant shall provide a minimum of one qualified Senior Resident Engineer and other qualified Resident Engineers, as needed to effectively manage the Project.
 - b. Consultant shall act as a prime point of contact between Contractor, JPA, and utility companies. Consultant may, when requested by JPA, act as point of contact

between Caltrans, design engineers, cities, and the public.

- c. Consultant shall coordinate utility relocations with utility companies and their designees, as well as the Caltrans utility inspector.
- e. Consultant shall review Project plans and special provisions for possible errors and deficiencies prior to construction of any specific element and report such findings to JPA. Should JPA determine that changes are necessary, CONSULTANT shall assist in implementation and processing of change orders in accordance with contract documents.
- f. Consultant shall provide all required monitoring, coordination, and tracking of construction progress to ensure the Project proceeds on schedule and according to the order of work in the plans and special provisions. CONSULTANT shall expedite work, as required, to maintain schedule in conjunction with the overall construction staging program.
- h. Consultant shall provide a qualified SWPPP coordinator who shall review contractor prepared Storm Water Pollution Prevention Plans (SWPPP) and coordinate approval with JPA and Caltrans. Consultant shall cooperate with monitoring agency inspections and field reviews.
- i. Consultant shall coordinate the implementation of JPA approved changes with the design engineer.
- j. Consultant shall review and approve falsework and shoring plans.
- k. Consultant shall review and approve Traffic Control Plans.
- l. Consultant shall coordinate all Project construction activities with other on-going projects within and adjacent to the Project limits.

4. Construction Inspection

- a. Consultant shall coordinate all required inspections necessary for the Project. Consultant shall ensure that appropriate Caltrans, City, and local agency personnel are notified and present as required throughout the Project. CONSULTANT shall notify JPA immediately regarding any directives, recommendations, notices, etc. received from agencies other than JPA.
- b. Consultant shall perform daily on-site observations of the progress and quality of construction to determine if the work being performed is in general conformance with the contract documents, all applicable laws, codes, and ordinances.
- c. Consultant shall exercise reasonable care and diligence to discover and promptly report to JPA any and all defects or deficiencies in the materials or workmanship used in the Project.
- d. Consultant personnel assigned to the Project shall be thoroughly familiar with

Caltrans Standard Specifications, Caltrans Standard Plans, and the Standard Specifications for Public Works Construction (Greenbook). Consultant personnel shall have the ability to read and interpret construction plans and specifications. Consultant personnel shall also have knowledge of State of California Construction Safety Orders (Cal OSHA) and traffic control practices as specified in the Work Area Traffic Control Handbook (WATCH). In addition, Consultant personnel shall be familiar with the construction requirements of Caltrans Storm Water Pollution Prevention Program.

e. Assignments to be performed by Consultant personnel shall include, but are not limited to, the following:

1. Paving and subgrade inspection, structures and foundation inspection, signing and striping inspection, quantity calculations, checking grade and alignment, construction traffic control, and duties that may be required to determine that construction of the Project is being performed in accordance with the contract documents.
2. Identifying actual and potential problems associated with the Project and recommending sound engineering solutions.
3. Maintaining awareness of safety and health requirements. Monitoring Contractors' compliance with applicable regulations and construction contract provisions for the protection of the public and Project personnel.
4. Preparing complete and accurate daily reports, calculations, project records, payment quantity documents, reports, and correspondence related to Project activities.
5. Preparing construction sketches, drawings, and cross-sections, as necessary.
6. Assisting in the preparation of as-built plans.
7. Providing inspections for environmental compliance.
8. Maintaining awareness of water discharge requirements. Monitoring Contractors' compliance with applicable regulations and construction contract provisions required by Caltrans.
9. Monitoring Contractors' compliance with applicable regulations required by AQMD.
10. Other duties as may be required or reasonably requested.

6. Project Support

a. Construction Surveys

Consultant will provide all necessary Project related surveys and construction

staking, including horizontal and vertical control, right of way, and easements. Consultant shall ensure timely coordination of all staking requests from the Contractor.

b. Materials Testing and Geotechnical Services

Consultant will provide all necessary Project related materials acceptance testing. Caltrans will provide assurance testing services. Consultant shall coordinate all materials testing with Caltrans testers.

c. Public Relations

Consultant shall implement a public awareness program. The Public Information Officer (PIO) will manage all public awareness activities for this Project. Should Consultant Resident Engineers receive complaints from the public or other entities, he/she shall promptly notify PIO. Consultant shall maintain a log of all complaints and inquiries. When appropriate, Consultant shall direct the Contractor to remedy complaints in a timely manner.

d. Permits

Consultant shall review each segment for permit compliance and insure that necessary permits are obtained. Consultant shall assist in the coordination, timely processing and verification of approval for all permits. Consultant shall maintain permits and permit documentation on site.

7. Cost and Schedule

a. Consultant shall monitor and track the following:

1. Contract pay item quantities and payments
2. Contract change orders
3. Supplemental work items
4. Agency furnished materials
5. Contingency balance
6. Project budget

b. Consultant shall review and monitor Contractor's schedule and inform JPA of any significant changes or deviations in the schedule.

c. Consultant shall provide and maintain a Project staffing plan of field office personnel. In cooperation with JPA, the staffing plan shall be periodically updated to reflect Project progress and needs.

8. Contract Change Orders and Claims

a. Consultant shall receive and evaluate requests for changes and/or substitutions by the Contractor. Contract Change Orders submitted to JPA shall be accompanied by Consultant recommendations. Where applicable, Consultant shall convey proposed

changes to design engineer, other project Consultants, and/or Caltrans. If the requested changes are accepted, Consultant shall negotiate and prepare appropriate Contract Change Orders.

- b. Consultant shall attempt to avoid all unnecessary Contract Change Orders. When a Contract Change Order is necessary, Consultant shall consult with JPA prior to its preparation. Unless directed otherwise by JPA, the preferred method of payment for Contract Change Orders should be as follows
 - 1. Agreed Price
 - 2. Adjustment in compensation to a bid item
 - 3. Time and materials or Force Account
- c. Consultant shall attempt to identify all potential claims, track and monitor unresolved claims, and implement claims avoidance processes.
- d. Consultant shall assist JPA, as requested, in the identification, resolution, and final disposition of claims filed by the Contractor or third parties against JPA or the Project.

9. Safety

In addition to the requirements specified elsewhere in this contract, the following shall also apply:

- a. Consultant shall implement and conduct a comprehensive safety program including regular tail-gate safety meetings for Consultant personnel. Consultant shall provide monthly Consultant status of safety reports.
- b. Consultant shall comply with State of California Construction Safety Orders and provisions of the Caltrans Construction Manual.
- c. Consultant shall provide appropriate safety training for all Consultant field personnel.
- d. Consultant shall provide all necessary safety equipment as required for Consultant personnel.

10. Project Close Out

- a. Consultant shall prepare a list of items to be completed and/or corrected by the Contractor for final completion of the Project.
- b. Consultant shall collect and furnish as-built information to the design engineer for preparation of as-built drawings including pre-stress drawings and pile logs, as applicable.

- c. Consultant shall review and verify completeness of as-built drawings.
- d. Consultant shall conduct a final walk-through with JPA, Caltrans, Contractors, and design engineers.
- e. Consultant shall prepare final construction reports including the Project Completion Report.
- f. Consultant shall prepare and deliver to JPA all project files.
- g. Consultant shall assist JPA and Contractor in obtaining final release of all project permits.

C. DELIVERABLES

- 1. Inspector daily reports, extra work diaries, and Resident Engineers' daily diaries
- 2. Monthly Project Activity Summary Reports
- 3. Monthly Contractor progress payments, back-up documentation, and Contractor payment records.
- 4. Contractor final payment documents, delivered to JPA no later than ten (10) working days after acceptance by JPA of the completed construction projects
- 5. Project Completion Report
- 6. All project files, project reports, correspondence, memoranda, shop drawings, project logs, change order data, claims and claim reports, and Contractor payment records
- 7. Certified payrolls and fringe benefit statements for all employees, CONSULTANT and Contractor, who are subject to the State and/or Federal prevailing wage rates

D. EQUIPMENT AND MATERIALS TO BE PROVIDED BY CONSULTANT

- 1. Shall provide all necessary equipment including software, materials, supplies, miscellaneous tools, and safety equipment required for its personnel to perform the services accurately, efficiently, and safely.
- 2. Consultant personnel shall be provided with vehicles suitable for the location and nature of the work involved. Vehicles shall be equipped with locking tool boxes and detachable flashing yellow lights.
- 3. Consultant personnel shall be provided with a mobile radio, cellular phone, or other means to assure full-time communication. If a radio system is to be used, v shall provide a base station at the field office.
- 4. Consultant personnel shall be provided with all applicable standard plans, specifications, and other standards as appropriate (see item G below).

E. STANDARDS

All construction inspection and contract administration shall be in accordance with the Project bid documents, special provisions, plans, and current Caltrans manuals including:

1. Construction Manual and its revisions
2. Bridge Construction Records and Procedures Manual
3. Quality Assurance Program Manual
4. Manual of Traffic Controls for Construction and Maintenance Work Zones
5. Caltrans Standard Specifications and Standard Plans.
6. Caltrans Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual

F. LIMITATIONS TO AUTHORITY

Consultant does not have the authority to:

1. Authorize deviations from the contract documents.
2. Approve substitute materials or equipment; except as authorized in writing by JPA.
3. Conduct or participate in tests or third party inspections; except as authorized in writing by JPA.
4. Assume any of the responsibilities of the Contractors, Contractors' Superintendent, or subcontractors.
5. Exercise control over or be responsible for construction means, methods, techniques, sequences, procedures, or safety precautions.
6. Communicate directly with subcontractors or material suppliers without the prior consent of the Contractor.
7. Verbally authorize or approve change orders or extra work for the Project.
8. Offer or receive incentives, inducements, or other forms of enumeration to or from the Contractor to perform services or work outside the terms of any executed contracts for this Project.

G. PERSONNEL QUALIFICATIONS AND RESPONSIBILITIES

The quantity and qualifications of field personnel to be assigned will be determined by the scope of the Project and the degree of difficulty of required tasks to be performed. All personnel and personnel assignments shall be subject to approval by JPA. While some areas of responsibility may overlap, as a guideline, Consultant personnel assigned to the project shall have the following minimum qualifications:

1. Project Manager

Minimum qualifications shall be as follows:

- a. Six (6) years project management experience on similar highway and bridge construction projects.
- b. Accessible to JPA at all times during normal working hours.
- c. A thorough understanding of Caltrans construction practices and procedures.

The Project Manager will assume the following functional responsibilities:

- a. Review, monitor, train, and provide general direction for CONSULTANT inspection personnel.
- b. Assign personnel to projects on an as-needed basis.
- c. Administer personal leave.
- d. Prepare monthly reports for delivery to JPA.

2. Senior Resident Engineer

Minimum qualifications shall be as follows:

- a. Eight (8) years resident engineer experience on similar highway construction projects.
- b. Licensed Professional Civil Engineer in the State of California.
- c. Ability to work independently, make effective decisions concerning construction work in progress, and solve field problems.
- d. Accessible to JPA at all times including weekends and holidays.
- e. Thorough understanding of Caltrans field methods, practices, and construction office procedures.

The Senior Resident Engineer will assume the following functional responsibilities:

- a. Monitor and provide daily direction to CONSULTANT Resident Engineers and inspection personnel.
- b. Assign field personnel to specific project tasks.
- c. Monitor and track Contractor progress.
- d. Prepare daily, weekly and monthly reports as required.
- e. Coordinate efforts of the Construction Staking and Material Testing.
- f. Coordinate utility relocations with appropriate agencies and the Caltrans utility inspector.
- g. Act as prime field contact between various project Contractors

3. Resident Engineer

Minimum qualifications shall be as follows:

- a. Four (4) years resident engineer experience on similar highway construction projects.
- b. Licensed Professional Civil Engineer in the State of California.
- c. Ability to work independently, make effective decisions concerning construction work in progress, and solve field problems.
- d. Accessible to JPA at all times including weekends and holidays.
- e. Thorough understanding of Caltrans field methods, practices, and construction office procedures.

The Resident Engineer shall act under the direction of the Senior Resident Engineer and will assume the following functional responsibilities:

- a. Monitor and provide daily direction to CONSULTANT inspection personnel.
- b. Assign field personnel to specific project tasks.
- c. Monitor and track Contractor progress.
- d. Prepare daily, weekly and monthly reports as required.
- e. Coordinate efforts of the Construction Staking and Material Testing

- f. Coordinate utility relocations with appropriate agencies and the Caltrans utility inspector.

3. Lead Field Inspector

Minimum qualifications shall be as follows:

- a. Six years (6) construction inspection experience in public works or similar highway projects or a four-year degree in the field of civil engineering, transportation and four years of similar construction experience.
- b. Knowledge of Caltrans construction practices, physical characteristics and properties of highway construction materials, and approved methods and equipment used in making physical tests of construction materials.
- c. Ability to work independently, make effective decisions concerning construction work in progress, and solve field problems.
- d. Ability to direct the efforts of subordinate inspectors.
- e. Understanding of Caltrans field and construction office procedures.
- f. Ability to use an automatic level and transit for the purpose of verifying line and grade.

The Lead Field Inspector will assume the following functional responsibilities:

- a. Assist in inspections to assure compliance with contract plans, specifications, and special provisions on all phases of highway construction.
- b. Assist in the preparation of contract change orders, contract estimates, progress pay estimates, and other documents or reports required for the Project.
- c. Coordinate field testing of materials to monitor compliance with Project specifications and Caltrans Quality Assurance Program.
- d. Maintain accurate and timely project records. Perform quantity calculations for progress pay estimates.
- e. Perform analytical calculations such as basic earthwork, grading, profiles, and special staking procedures.
- f. Provide input for the redesign of facilities to fit existing field conditions.
- g. Monitor and track Contractor progress. Prepare daily, weekly, and monthly reports as required.

4. Field Inspector

Minimum qualifications shall be as follows:

- a. Two years construction inspection experience in public works or similar highway projects or a four-year degree in the field of civil transportation engineering.
- b. Knowledge of construction practices, physical characteristics and properties of highway construction materials, and approved methods and equipment used in making physical tests of construction materials.
- c. Ability to work independently. Ability to make minor decisions concerning construction work in progress and to solve field and office problems.
- d. Understanding of Caltrans construction methods and practices.
- e. Ability to use typical computer programs for word processing and spreadsheets.
- f. Ability to use an automatic level and transit for the purpose of verifying line and grade.

The Field Inspector will assume the following functional responsibilities:

- a. Assist in inspections to assure compliance with contract plans, specifications, and special provisions on all phases of highway construction.
- b. Assist in preparation of contract change orders, contract estimates, progress pay estimates, and other documents or reports required for the Project.
- c. Coordinate field testing of materials to monitor compliance with Project specifications and Caltrans Quality Assurance Program.
- d. Perform quantity calculations for progress pay estimates and maintain Project records.
- e. Perform analytical calculations such as basic earthwork, grading, profiles, and special staking procedures.
- f. Provide input for the redesign of facilities to fit existing field conditions.
- g. Perform labor compliance interviews of the Contractors' personnel.

5. Structural Representative or Lead Structural Inspector

Minimum qualifications shall be as follows:

- a. Six (6) years of bridge or structural construction inspection as related to Caltrans or major public works projects and a four-year degree in civil engineering.
- b. Licensed Professional Civil Engineer in the State of California.

- c. Knowledge of stress analysis, structural mechanics, and strength of materials.
- d. Knowledge of Caltrans construction practices and the physical characteristics and properties of various highway bridge construction materials including concrete.
- e. Experience in the following areas: foundations, pile driving, concrete pre-stressing, bridge deck construction, falsework, and shoring. Additional construction experience in the following areas is also needed: bridge retrofit, deep excavations, hard driving conditions, and deep foundations.
- f. Ability to work independently. Ability to perform duties in the construction field office and effectively make decisions concerning construction work in progress and solving field problems.
- g. Ability to direct the efforts of subordinate inspectors.
- h. Ability to use an automatic level and transit for the purpose of verifying line and grade.
- i. Thorough understanding of Caltrans field methods, practices, and construction office procedures.

The Structural Representative shall assume the following functional responsibilities:

- a. Assist in inspections to assure compliance with contract plans, specifications, and special provisions on all phases of structural construction such as bridges, foundations, walls, falsework, shoring, and drainage structures.
- b. Make grade, alignment, quantity, falsework, and shoring calculations.
- c. Assist in the preparation of contract change orders, contract estimates, progress pay estimates, and other documents or reports required for the Project.
- d. Coordinate the sampling and testing of construction materials to monitor compliance with contract specifications.
- e. Monitor and track Contractor progress. Prepare daily, weekly, and monthly reports as required.
- f. Coordinate with Resident Engineer, as well as the Construction Staking and Material Testing.
- g. Direct subordinate inspectors.

6. Structural Inspector

Minimum qualifications shall be as follows:

- a. A minimum of two (2) years of bridge design or structural construction inspection as related to Caltrans or major public works projects or a four-year degree in civil or structural engineering.
- b. Knowledge of stress analysis, structural mechanics, and strength of materials.
- c. Knowledge of construction practices and the physical characteristics and properties of various highway bridge construction materials including concrete.
- d. Experience in one or more of the following areas: pile driving, concrete pre-stressing, bridge deck construction, falsework, and shoring.
- e. Ability to work independently and make minor decisions concerning construction work in progress and to solve field and office problems.
- f. Ability to use an automatic level and transit for the purpose of verifying line and grade.

The Structural Inspector will assume the following functional responsibilities:

- a. Assist in inspections to assure compliance with contract plans, specifications, and special provisions on all phases of structural construction such as bridges, foundation, walls, falsework, shoring, and drainage structures.
- b. Make grade, alignment, quantity, falsework, and shoring calculations.
- c. Assist in the preparation of contract change orders, contract estimates, progress pay estimates, and other documents or reports required for the Project.
- d. Sampling and testing of construction materials to monitor compliance with contract specifications and Caltrans Quality Assurance Program.

7. Office Engineer

Minimum Qualifications shall be as follows:

- a. Two years (2) office engineering on similar Caltrans highway and/or bridge construction projects.
- b. Knowledge of Caltrans Office of Highway Construction forms used to administer construction projects.
- c. Knowledge of Caltrans system of document organization.
- d. Knowledge of construction records and accounting procedures.
- e. Knowledge of documentation, procedures, and reporting for federally funded projects.

- f. Knowledge of laws and regulations governing the payment of prevailing wages.

The Office Engineer will assume the following functional responsibilities:

- a. Process monthly progress pay estimates, monthly status reports, extra work reports, and weekly statements of working days.
- b. Prepare and process contract change orders.
- c. Monitor construction budget and schedule.
- d. Prepare, maintain, and/or file project documents including labor and equipment records, correspondence, memoranda, meeting minutes, claims, personnel records, labor compliance reports, and daily, weekly, and monthly reports.
- e. Perform routine calculations and checking of quantities.
- f. Coordinate all office activities and functions with JPA representatives.